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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/747,762		Joseph D. Lichtenhan	38559-0257952 (6565-10)	4698

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EXAMINER	
ROBERTSON, JEFFREY	
ART UNIT	**PAPER NUMBER**
1712	9

DATE MAILED: 02/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Offic Action Summary	Application No.	Applicant(s)	
	09/747,762	LICHTENHAN ET AL.	
	Examiner	Art Unit	
	Jeffrey B. Robertson	1712	

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 December 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-32* is/are rejected.

7)☒ Claim(s) *10-14,16,17 and 25-32* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3,4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 05/08/01 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

The Chevalier et al. article has been considered, however it is noted that the month that this article is printed is not known. Applicant should provide this information in response to this office action.

Response to Amendment

2. The amendment papers to the preliminary amendment were unsigned. For the purposes of examination, the signature appearing on the accompanying fee sheet will be accepted. However, in the future applicant is reminded that the amendment papers should be signed. In addition, the Remarks section of the amendment states that claims 1-27 have been cancelled in favour of claims 28-60, while in the present application, claims 1-8 have been cancelled in favour of claims 9-32. Also, a different docket number appears on the bottom of the page, 038559-0257952.

Specification

3. Applicant should not have "figures" in the specification because such a label indicates a drawing. Applicants must submit the flow diagrams as drawings because

they do not conform to Rule 37 CFR § 1.58 for those diagrams. The examiner has reproduced 37 CFR § 1.58(a) and MPEP § 608.01 for applicant's convenience.

37 CFR § 1.58 Chemical and mathematical formulae and tables.
(a) The specification, including the claims, may contain chemical and mathematical formulas, but shall not contain drawings or flow diagrams. The description portion of the specification may contain tables; claims may contain tables either if necessary to conform to 35 U.S.C. 112 or if otherwise found to be desirable.

MPEP § 608.01 (p. 600-59, August 2001)
Graphical illustrations, diagrammatic views, flowcharts, and diagrams in the descriptive portion of the specification do not come within the purview of 37 CFR 1.58(a), which permits tables, chemical and mathematical formulas in the specification in lieu of formal drawings. The examiner should object to such descriptive illustrations in the specification and request formal drawings in accordance with 37 CFR 1.81 when an application contains graphs in the specification. The specification, including any claims, may contain chemical formulas and mathematical equations, but may not contain drawings or flow diagrams.

Appropriate correction is required.

4. The disclosure is objected to because of the following informalities: On page 5, line 14 and page 8, line 27, Karstedt is spelled incorrectly. In addition, applicant should reference the chemical identity of Karstedt and Spiers catalysts in the specification.

Appropriate correction is required.

Claim Objections

5. Claims 16 and 17 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

6. Claims 10-14, and 25-32 are objected to because of the following informalities: For claim 10, Karstedt is spelled incorrectly. For claim 12, the claim does not end in a

period. Appropriate correction is required. For claim 25, in line three, silane should be singular.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 9-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For claims 1 and 12, there is a lack of antecedent basis for the term "the member". This term has not been previously set forth in the claims. For claim 1, there is also a lack of antecedent basis for the term "the second member." It is not known what applicant is referring to by the use of this term.

For claim 11, there is a lack of antecedent basis for the term, "the first member". What does this term refer to in claims 9 or 10? Also for claim 11, the term "undesirable" is indefinite because it is not known what applicant's definition of undesirable is.

For claim 13, there is a lack of antecedent basis for the step of "removing a byproduct." None of the prior claims set forth that a byproduct is produced.

For claims 15 and 18, the term "novel" should be removed from the claims because it is indefinite. How is one to tell if the compound is novel or not?

For claim 22, the phrase "metal-based catalyst comprising...and" is indefinite because it is not known if the catalyst comprises all the elements following comprising and if "halides, phosphates, and acetates" refers to metal complexes of these or the

groups themselves. Also, the cocatalyst must contain both organoaluminum halides and aluminum halides as the claim is currently written.

For claims 25, 26, 29, and 32, they are incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: It is not clear from the claims how treating a second composition with a vulcanizing agent cures the first composition. In addition these claims also contain the "comprising...and" language detailed for claim 22. It is not clear what elements are required to be present. From the claim language, it seems as though all the elements are required.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in-
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

10. Claims 12-15, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Haddad et al. (J. Am. Chem. Soc. Polym. Preprints, vol. 38, No. 1, pp.127-128) or Mather et al. (Macromolecules, vol. 32, pages 1194-1203).

For claims 12-14, Haddad et al. teaches on page 127, column 2, that a strained ring olefin is added to a POSS through silation using norbornenylethyltrichlorosilane. Haddad et al. teaches that there is a by-product removed, where the product is precipitated. For claims 15 and 18, on page 128, column 2, Figure 5, Haddad et al. shows that telechelic polymers containing strained ring olefins are made.

For claims 12-14, Mather et al. teaches on page 1195 in Scheme 1 that a strained ring olefin is added to a POSS through silation using norbornenylethyltrichlorosilane. Mather et al. teaches that there is a by-product removed, $HNEt_3Cl$. For claims 15 and 18, in Scheme 1 Mather et al. shows that telechelic polymers containing strained ring olefins are made.

11. Claims 9, 15, 18-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Watanabe et al. (U.S. Patent No. 4,657,965).

For claims 9 and 15, Watanabe et al. teaches in column 2, lines 42 through column 3, line 5 that polysiloxane polymers containing strained ring olefins are made through a hydrosilation process in the presence of a platinum catalyst such as chloroplatinic acid. For claim 18, in column 3, lines 36-39, Watanabe et al. teaches that telechelic polymers can be made. For claim 19, in column 4, lines 59-65 Watanabe et al. teaches that a sulfur or peroxide-containing vulcanizer can be used in column 4, line 59 through column 5, line 9. For claims 20 and 21, in column 5, lines 10-20, Watanabe

et al. teaches that the amount of vulcanizer can vary from 0.1-25 parts by weight.

12. Claims 9, 15, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Bard et al. (U.S. Patent No. 5,008,360).

For claims 9, 15, and 18, Bard et al. teaches in column 2, lines 44-59, and column 3, lines 5-65, that a polyene, which is a strained ring olefin, is reacted with a siloxane in a hydrosilation reaction to produce telechelic polymers containing functional strained ring olefins. In column 8, lines 65-67, Bard et al. teaches a platinum catalyst for the hydrosilation reaction.

13. Claims 9-11, 15, 18, and 19, are rejected under 35 U.S.C. 102(b) as being anticipated by Jacobine et al. (U.S. Patent No. 5,034,490).

For claims 9, 10, and 15, Jacobine et al. teaches in column 7, lines 10-25, that strained ring olefin containing siloxanes are made through a hydrosilation process using Karstedt catalyst. For claim 11, Jacobine et al. also teaches that the product is stripped on a rotary evaporator and distilled in vacuo. For claim 18, in column 4, lines 5-15, Jacobine et al. discloses telechelic functional strained ring siloxanes. For claim 19, in column 5, lines 62-65, Jacobine et al. teaches the use of organic peroxides.

14. Claims 9-11, 15, 18, are rejected under 35 U.S.C. 102(b) as being anticipated by Frances et al. (U.S. Patent No. 5,194,489).

For claims 9 and 15, Frances et al. teaches in column 2, line 30 through column 3, line 17 that strained functional ring systems are made through a hydrosilation process. in column 3, lines 18-28, Frances et al. teaches that a Karstedt catalyst may be used. For claim 11, in column 3, lines 48-49 Frances et al. teaches that the product

is purified and isolated. For claim 18, in column 2, lines 50-68, Frances discloses that if d=1, then both Z's would be hydrogen, which would lead to a telechelic polymer containing a functional strained ring olefin.

15. Claims 9 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Endo et al. (U.S. Patent No. 5,055,499).

For claims 9 and 15, in column 5, lines 19-39, Endo et al. teaches the hydrosilation of a strained ring olefin to a silane.

16. Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by Tenney et al. (U.S. Patent No. 5,071,701).

For claim 15, Tenney et al. teaches strained ring olefin silanes in column 9, lines 44-55.

17. Claims 9, 15, and 18, are rejected under 35 U.S.C. 102(a) as being anticipated by Chevalier et al. (Journal of Inorganic and Organometallic Polymers, Vol. 9, No. 3, 1999, pp. 151-64).

For claims 9 and 15, on page 154, lines 1-12 Chevalier et al. teaches that a strained ring olefin is added to a siloxane through a hydrosilation reaction using a platinum catalyst. For claim 18, on page 156, line 10, Chevalier et al. teaches a telechelic siloxane in Structure 2.

Allowable Subject Matter

18. Claims 22-24 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

19. Claims 25-32 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, and the claim objections set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

20. The following is a statement of reasons for the indication of allowable subject matter: None of the cited references teach or suggest the methods of curing of claims 22-32, where a metal-based catalyst is used in combination with an aluminum co-catalyst, or a difunctional or polyfunctional silane is used along with a platinum, palladium, or olefin complex.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey B. Robertson whose telephone number is (703) 306-5929. The examiner can normally be reached on Mon-Fri 7:00-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert A. Dawson can be reached on (703) 308-2340. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

JBR
February 26, 2002

Robert Dawson
Supervisory Patent Examiner
Technology Center 1700